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ABSTRACT

This paper examines what is known (and not known) about adult college students. It reports on a study which compared different age groups in different types of institutions and reviews the research about how adults learn and methodologies for teaching adults. The study compared age distributions at four Texas institutions: the University of North Texas, Embry-Riddle Aeronautical University, the University of Dallas, and Art Institutes International. Analysis of the age demographics at the four institutions indicates that the vast majority of graduate students are age 25 and over; the number of undergraduate students age 25 and over varies widely between the four institutions. A review of adult learning theories offers one theory suggesting that educators of adults who are interested in improving teaching use a cycle involving questioning, theorizing, testing, and reflection. Other reviews of the literature address such concerns as whether the literature adequately addresses the concerns of educators of adults, how teaching can be improved, and who is responsible for improving teaching. The paper concludes that there continues to be a need for research about adult student learning and that college programs need to recognize how older students differ from traditional students. (Contains 36 references.) (DB)

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Adult Students in the College Classroom

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Adult Students in the College Classroom

Abstract

Adult students are returning to college classrooms in increasing numbers. Examples of age differences of student bodies of selected institutions are compared. With their life and work experiences adult students differ from traditional students. Professors must be more aware of the differences in adult students and traditional students The challenge for professors is to understand how adult students learn and how to best teach them. What is known and not known about how adults learn and how to teach them is examined based on anecdotal examples addressing these issues are examined. The need for empirical research in these areas is stressed.

Adult Students in the College Classroom

As our society continues its advance into the information age, there is a knowledge explosion. This has caused our society to realize that knowledge acquired in the past is either obsolete or becoming so. As a result, education has become a lifelong experience. In colleges and universities the traditional student (one that lives on campus and completes the undergraduate degree in four years) is becoming a minority and is being replaced by the nontraditional student. Some researchers define the nontraditional/adult student as one whose age is 25 or older. A recent report by the National Center for Educational Statistics shows that students 25 and older accounted for more than 40% of the 14.4 million students enrolled in U. S. colleges and universities in 1996.

Colleges and universities have come to realize there is a new challenge - to teach the nontraditional student, typically a working adult. Many U. S. community colleges place an emphasis on continuing education by offering "trade" classes at night for the working adult. Institutions of higher education, especially in their post baccalaureate offerings, have scheduled classes after normal working hours to accommodate adult students continuing their academic education. Other innovations include distance education, the use of computers, and interactive videos. These trends have fostered an interest about professors teaching the nontraditional student.

Adults return to the classroom to update their skills and knowledge. They bring with them a variety of educational backgrounds, some recent and others from years back. They also bring a variety of experiences from life and work. The adult student has something to contribute, and the adult educator should use this resource. Students will benefit long after

they leave the classroom if the adult educator helped the student acquire skills of self-directed learning. When acquiring additional knowledge the adult student can "achieve complete self-identity through the development of their full potentialities" (Knowles, 1970, p. 23).

Greenwood (1998) noted "Students of today must be better trained--in an overexpanding body of knowledge--than were any previous cohorts. Because of rising educational costs, more students are working more hours while they attend college and may be less productive in their college courses." (p. 48)

This paper examines what is known (and not known) about adult students. A comparison of different age groups in different types of institutions is presented. Research about how adults learn and methodologies about how to teach adults is reviewed. The paper concludes by addressing the need for future research about adult learning and teaching adults.

Adult Students

Long (1990) noted that two extreme views about adult students are fairly widespread. One is that adults are less capable than younger learners, and the other that adults are super learners. He argued that the truth is in between, and noted that "unfortunately adult learners often remain a mystery" (p. 23). He further argued that speaking of a generic adult learner is erroneous because "the adult learner" is not representative of all adults.

Knowles (1970) took issue with the use of pedagogy. He adapted the word "andragogy" to mean "the art and science of helping adults learn" (p. 38). Knowles shifted the emphasis to helping adults learn from the concept of teaching adults. Knowles (1973) noted that andragagy was used as early as 1833, but the theory and technology now identified with andragogy are new. He advocated that the adult educator's primary and immediate

mission was to help students satisfy their needs and achieve their goals. Lee (1998) stated that "andragogy is more than a learning theory. Its assumptions underlie a style of instruction that many trainers today assume is simply good practice" (p. 50).

Knox (1977) produced a widely referenced study of adult development and learning from which he made broad observations concerning adult learning. He viewed adults as learning continually and informally as they change roles and make other adaptations. The adult's learning achievements are modified a) by individual characteristics, b) the learning context of the physical, social, and personal characteristics surrounding the learning act, and c) the context and pace of learning. Lanese (1983) stated that a positive learning environment affects successful adult learning and by "the closeness of training goals to the participants' own goals and objectives" (p. 16).

Brundage and Mackeracker (1980) identified 36 learning principles that apply to adult learning. One was that adults can learn throughout their lifetime, and another was that experience can either help or hinder learning. Stress was identified as a major block to learning. James (1983) developed a set of basic principles of adult learning after examining articles, research reports, dissertations, and text books on adult learning. These principles generally reinforce the earlier study by Brundage and Mackeracker.

A major drawback to developing a comprehensive theory about adult learning is that researchers primarily base observations on white, middle class North Americans (Brookfield, 1988). Researchers have not determined whether past research can be generalized to other ethnic groups and different socioeconomic populations. Another drawback is the changing environment in both schools and the work place. Greenwood (1998) examined the teaching

environment and wrote "Teaching appears initially as an independent activity, but student learning is, in fact, the result of joint activity. Knowledge accrues from the efforts of many professors along with student advising and learning centers, as well as textbooks, libraries, laboratories, and computing resources" (p. 50). Greenwood also identified the background skills and interest level which students bring as major factors in student learning.

Comparison of Selected Institutions

Any comprehensive theory about adult learning is necessarily complex and will have to be set in some context. Different contexts will exist in different institutions and will vary in the programs these institutions offer and the age demographics of the student body. The diversity of institutions implies that such diversity would probably influence the theory of adult learning. It may well be there is no typical context, but that context should be considered in conceptulation of a comprehensive thesis. Another important factor is the emphasis the institutions give to faculty development in the area of helping the professors understand the adult student and how to teach them.

The composition of the student body of four institutions was selected for comparison purposes. These are the University of North Texas, Embry-Riddle Aeronautical University, the University of Dallas, and Art Institutes International. The University of North Texas is a public institution that offers undergraduate, masters, and doctorate degrees. The University of North Texas fall 1998 enrollment was 6,053 graduate students and 19,461 undergraduates in the student body. Embry-Riddle Aeronautical University is a private college that offers aviation-related undergraduate and masters degrees. Embry-Riddle has two resident campuses and over 120 Resident Centers in the College of Career Education. The residence

centers cater to the working adult. The fall 1998 enrollment was 2,626 graduate students and 10,924 undergraduates. Tables that follow do not show 437 students whose date of birth was not in the data base. The University of Dallas is a private liberal arts institution that offers undergraduate, masters, and doctoral degrees. In the fall 1998 there were 1,157 students in undergraduate programs and 1,935 in graduate programs. Data in the tables does not include eight graduate students whose date of birth was not recorded.

Art Institutes International (AII) awards associate degrees and had eight locations prior to its expansion starting in 1996. An example is the Art Institute of Dallas, that awards associate of applied arts and associate of applied science in interior design, computer animation, multimedia, video production, graphic design, website administration, and fashion design. Nine new locations have been established since 1996 with eight more planned. Data for shown for AII reflects seven of the eight campuses in operation prior to the 1996 expansion are is for 76.64% of the 23,303 students enrolled. (One campus did not include age information in the data base.)

Tables are used to show the difference in age demographics of the student bodies of these four institutions. Table 1 shows the number and percentage of graduate and undergraduate students who are 25 and older in the student bodies.

Table 1 Students age 25 and older, selected institutions, fall 1998 enrollment

Institution	Graduate Students	Undergraduate Students
Univ. of North Texas	5133 (84.80%)	4136 (21.25%)
Embry-Riddle	2378 (93.43%)	4905 (46.64%)
Univ. of Dallas	1763 (91.49%)	103 (8.90%)
Art Institutes Intl.	-	7099 (39.75%)

An examination of this table shows that the vast majority of graduate students are 25 and older. Undergraduate students who are 25 and older vary widely between the institutions from a high of 46.64% at Embry-Riddle to a low of 8.9% at the University of Dallas.

The Tables 2 and 3 show cohorts in ten year age groupings for graduate and undergraduate students.

Table 2 Demographics of graduate students selected four-year institutions, fall 1998 enrollment

Age Group	U. of North Texas	Embry-Riddle	U. of Dallas
60 and over	42 (0.69%)	7 (0.28%)	22 (1.14%)
50 - 59	404 (6.67%)	129 (5.08%)	109 (5.63%)
40 - 49	1024 (16.32%)	498 (19.60%)	335 (17.31%)
30 - 39	1653 (27.31%)	1216 (47.86%)	714 (36.90%)
20 - 29	2928 (48.37%)	691 (27.19%)	747 (38.60%)
under 20	2 (0.03%)	-	-

Table 3 Demographics of undergraduate students selected four-year institutions, fall 1998 enrollment

Age Group	U. of North Texas	Embry-Riddle	U. of Dallas
60 and over	9 (0.05%)	7 (0.07%)	-
50 - 59	87 (0.45%)	134 (1.27%)	6 (0.52%)
40 - 49	369 (1.90%)	931 (8.81%)	16 (1.38%)
30 - 39	1134 (5.83%)	2287 (21.75%)	28 (2.42%)
20 - 29	13032 (66.96%)	5187 (49.32%)	650 (56.16%)
under 20	4830 (24.82%)	1971 (18.65%)	457 (39.50%)

The large number of graduate students who are less than 30 years old would tend to indicate that many students enter graduate school shortly after completing an undergraduate degree. The large percentages of undergraduate students under 30 at the University of North Texas and the University of Dallas would tend to indicate an aim at the more traditional

student. At Embry-Riddle most of the undergraduates under 30 years old were enrolled at the two resident campuses and more of the older students were in the College of Career Education resident centers. A side note, the oldest student is an 85 year old undergraduate female at the University of North Texas.

Theories About Adult Learning

> "It has been suggested the term *learning* defies precise definition because it is put to multiple uses. Learning is used to refer to (1) the acquisition and mastery of what is already known about something, (2) the extension and clarification of meaning of one's experience, or (3) an organized, intentional process of testing ideas relevant to problems. In other words, it is used to describe a product, a process, or a function." (Smith, 1982, p. 34)

Learning theories first emerged from philosophy and religion, but many disciplines have and continue to contribute to the theories. Thorndike conducted the first systematic investigation of learning in the U.S. in a study of animals in 1898. In 1928 he conducted studies to determine the process of adult learning and demonstrated that adults could learn. He contributed to scientific knowledge when *Adult Interests* was published in 1935. Lindeman (1926) examined the artistic (intuitive/reflective) stream of adult learning. He stated ". . . the resource of highest value in adult education is the *learners' experience*. If education is life, life is education" (pp. 9-10). Knowles (1970) stated that Lindeman's assumptions made about adult learners has been supported by research and is the foundation of modern adult learning theory. These assumptions are:

1. Adults are motivated to learn as they experience needs and interests that learning will satisfy; therefore, these are the appropriate starting points for organizing adult learning activities.

2. Adults' orientation to learning is life-centered; therefore, the appropriate units for organizing adult learning are life situations, not subjects.
3. Experience is the richest resource for adults' learning; therefore, the core methodology of adult education is the analysis of experience.
4. Adults have a deep need to be self-directing; therefore, the role of the teacher is to engage in a process of mutual inquiry with them rather than to transmit his or her knowledge to them and then evaluate their conformity to it.
5. Individual differences among people increase with age; therefore, adult education must make optimal provision for differences in style, time, place, and pace of learning. (p. 31)

Kidd (1973) makes several points about adult learning. "To be honest, it should be pointed out that ignorance still abounds concerning the learning of adults" (p. 13). He does note that probably more is known than is practiced and that in the two decades prior to writing the book, the increase of knowledge about adult learning increased at a phenomenal rate. Long (1990) referred to earlier studies that identify three kinds of learning motives; activity oriented, goals oriented, and learning oriented. He suggests that two or all three motives can interact.

Learning theories can be categorized in three general areas, cognitive, affective and behavioral domains. The cognitive theories deal with knowledge acquired through perception, reasoning, or intuition. Mainstream advocates of the cognitive theories include Jerome Bruner, David Ausubel, and David Hunt. Affective theories are based on emotions or feelings rather than thought as a basis for learning. Many have contributed to the affective theories including Carl Rogers and Abraham Maslow. The behavioral theories use psychological means such as reinforcement and aversion therapy to change or modify behavior and stress the role of the environment as a determinate of behavior. B. F.

Thorndike and B. F. Skinner are but two of those who have worked extensively in this area. Kidd (1973) stated "No adult educator can possibly keep up with all the research that may affect his work, but he cannot remain aloof and ignorant of occurrence that effect so many lives" (p. 117).

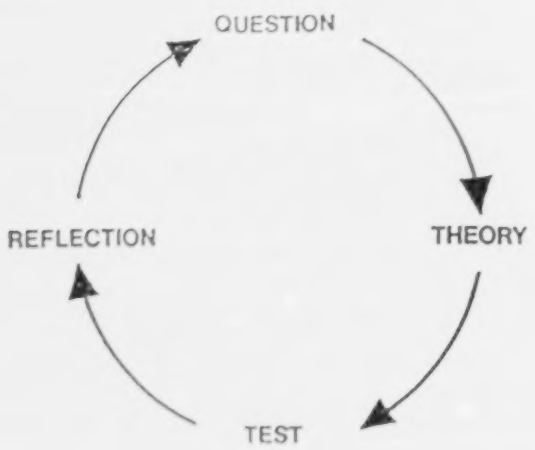
Knowles (1970) made several assumptions that differentiate andragogy from the pedagogy model. Adults need to understand why they need to know something before investing time and energy in it. Adults need to be seen and viewed as capable of self-direction. The volume and quality of experience adults bring to the classroom is varied and much greater than that of younger students. The adult's orientation to learning is life-centered rather than subject-centered. Motivation is both external (e.g., better jobs, promotions, higher salaries) and internal (the desire for increased self esteem, quality of life, increases knowledge in an area of interest, exploration/experimentation, or even job satisfaction.)

Houle (1961) reported on the investigation of a small group of adult students to determine why adults enroll in continuing education. The study also gave some insights into how these adults learned. He described the subjects as overlapping groups with the emphasis of each group differing. One group was goal-oriented and used education to accomplish definite objectives. The second group was activity-oriented and had building human relationships as its primary emphasis. Those who were learning-oriented sought knowledge for its own sake and were lifelong learners.

Handy (1990) conceptualized learning as a wheel divided into four parts: questions, theories, testing, and reflection. The wheel starts with a question, a problem to be solved, a

dilemma to be resolved, or a challenge to be met. The theory portion is a stage of speculation, of freethinking, of reframing, of looking for clues that lead to theories. The next part is to test the theories in reality. Theories that work help improve the process, others must be revised or discarded. The reflection part of the wheel is to look for better explanations of what went wrong and why or what went right and why. Handy's wheel is shown in Figure 1 below.

Figure 1. Handy's Wheel of Learning



Source: Handy, 1990, p. 58. Used with permission of the author.

Handy noted that true learning was difficult and the deliberate change that goes with it is rare. He illustrated this by showing how more trivial definitions of learning are not true learning:

- Learning is *not* just knowing the answers. It is *mastermind* learning at its best, rote learning at its most boring, and conditioned response at its most basic. It does not move the wheel.

- Learning is *not* the same as study, nor the same as training. It is bigger than both. It is a cast of mind, a habit of life, a way of thinking about things, a way of growing. Learning is not measured by examinations, which usually only test the theory stage, but only by a growth experience, an experience understood and tested.
- Learning is *not* automatic, it requires energy, thought, courage, and support. It is easy to give up on it, to relax, and to rest on one's experience, but that is to cease to grow.
- Learning is *not* only for intellectuals, who often shine at the theorizing stage, but are incurious, and unadventurous and therefore add little to their experience as they go through life.
- Learning is *not* finding out what other people already know, but is solving our own problems for our own purposes, by questioning, thinking and testing until the new solution is a new part of our lives. (pp. 62, 63)

An adult educator who is interested in improving teaching can use Handy's wheel to develop and test learning theories. The reflection element of the process is used to assess the adequacy of the theories as they apply to the adult student.

Adult Educators

An issue always subject to debate in education is whether teaching is an art or a science. Hostler (1982) and Lenz (1982) both view that teaching is an art. Hostler suggested that teaching adults cannot be reduced to a set of rules to be applied in different situations. Miller (1964) expressed an earlier contrary view. He stated that the (teacher) artist needs rigorous training and tough criticism from his peers and mentors. Whiting, Guglielimo, and Burrichter (1988) stated "The job of the educator is to facilitate the development of the adult learners in accordance with the students' goals and needs" (p. 1). The researchers noted the interest in adult development was because of the increasing life span and the flexibility required by adults to live in today's rapidly changing society.

Little has been done to address the adult educator and the adult student except in the area of continuing education that is primarily task or skill-oriented. For example Stephens and Roderick (1970) compiled writings by experts that addressed teaching methods, but these lacked empirical research. Gunn, Gardner and Burrichter (1980) developed a resource for adult educators to assess his/her competencies and validate his/her skills and expertise by addressing adult learning, community development, curriculum design, instructional skills, and interpersonal relations. Teaching styles in adult education was examined by Lapides (1980) based on Maslow's hierarchy of human needs. Westmeyer (1988) examined an overview of adult education and discussed instructional modes intended for an audience of college professors, continuing education instructors outside the formal education setting, and students of higher education.

A synthesis of theoretical and practical perspectives of experienced practitioners of the craft of adult education was compiled by Barer-Stein and Draper (1993). The particular characteristics of adult learners were examined by Polson (1993) who discussed the implications for teaching the adult learners. Processes for adult educators to examine their beliefs about teaching and teaching behavior was compiled by Heimlich and Norlad (1994). There is a gap in the literature addressing the relationship of the adult educator and the adult student in a college or university setting. When college professors have classes with all traditional students, all nontraditional students, or a combination different teaching approaches may be necessary.

To examine the role of the adult educator several questions are posed. Does the literature address the adult educator? How can teaching be improved? Does the literature

provide models that can be used? Who is responsible for improving teaching? These areas will be addressed in turn.

The answer to the first question, "Does the literature address the adult educator?" is partially answered in the field of adult education. More recently there have been additions to the literature aimed at the teaching of the traditional college age student, unfortunately these do not address the adult learner. The missing link is that the adult student in the college classroom has not been the subject of empirical research.

To the question of how can teaching be improved, Galbraith (1990) surveyed the literature to determine if a listing of general characteristics and exemplary principles of instruction and practice for an adult educator could be developed. He described the educational climate as having two components, the physical and the psychological. The physical includes the classroom including seating arrangement, lighting, heating or cooling, decor, and the absence of outside distractions. The psychological climate is for the professor to establish a climate for learning that is supportive, challenging, informal, open, and spontaneous.

Knowles (1970) states that assumptions about learning and teaching using the andragogical approach include premises that adults can learn, learning is an internal process, and there are superior conditions of learning and principles of teaching. He developed a list, principles of teaching, that would apply to the conditions in a learning situation. An example of one condition and the associated principles is shown:

CONDITIONS OF LEARNING	PRINCIPLES OF TEACHING
The learners feel a need to learn.	1.) The teacher exposes students to new possibilities for self-fulfillment. 2.) The teacher helps each student clarify his own aspirations for improved behavior.

3.) The teacher helps each student diagnose the gap between his aspiration and his present level of performance.
4.) The teacher helps the students identify life problems they experience because of gaps in their personal equipment. (Knowles, 1970, p. 52)

Knowles saw the principles as a means by which adult educators help adult students learn. Unfortunately, the conditions and principles are intuitive and have not been subjected to empirical research.

O'Brien (1998) provides an anecdotal example of the effectiveness of conditions of learning. A professor in the mathematics department at The University of California at Berkeley had high performing and low performing students in an elementary calculus class. The professor did not change his teaching methods or improved his teaching, but improved the conditions of learning. He found, that among other things, the high performing students worked together and the low performers worked alone. He reorganized the class and required all students to work in groups. "The improvement was striking" (p. 94).

Some strategies have been developed on a sound research basis and tested across disciplines. The sophistication of these strategies allows them to be called models. Travis (1995) noted the lack of preparation for teaching encountered by college professors. He noted many institutions place emphasis on research and publication, and in the process give scant attention to the faculty who are not prepared for the classroom. New faculty will either emulate a professor they admired, or do things differently that a professor did that they hold in low esteem. This leaves them on their own to develop a teaching method and style that reflect their experiences with which they are comfortable. Travis (1995) reviewed and summarized various models that faculty can use to improve their teaching. The collection of models Travis compiled are divided into six categories:

- Self-examination of the teaching process,
- Models that provide for sharing with colleagues,
- Expansion of the sharing models to institutions and organizations across the country,
- Learning of teaching skills requiring trained facilitators,
- Models that provide a theoretical basis for teaching and learning processes, and
- Theories of instructional design.

These were not formulated for an adult educator to use when teaching adult students, but they can investigated for adaption. Travis did not discuss how or if the models could be used to improve the teaching of adult students.

Seaman and Fellenz (1989) addressed the needs of the adult learner and the teacher of adults. In organizing learners for content delivery, they grouped students into small groups (learning teams), courses for intermediate size groups, and presentations for larger groups. In a college or university setting large groups is the accepted approach for organizing learners. One limitation is that "As traditionally taught, courses tend to encourage passivity among adult learners" (p. 43). They discussed different presentation, action, and interaction strategies giving advantages and disadvantages of each. A strength of the lecture is that it "is relatively easy to plan and can be more economical than other teaching strategies" (p. 55). They argued that a major disadvantage is that long-term retention of the material is not very likely.

Zemke and Zemke (1981) noted that no single theory or set of theories had been developed to understand adults or help teachers work effectively and efficiently with them. They noted that there was a "fairly reliable body of knowledge about adult learners" (p. 3), and developed 30 points divided into three areas; things we know about adult learners and their motivation, things we know about designing curricula for adults, and things we know

about working with adults in the classroom. If the "body of knowledge" that Zemke and Zemke referred to was based on empirical research, they did not cite the sources.

In addressing technology applications for training adults, Rodriguez and Purdy (1998) noted that those involved with the training are faced with challenges in teaching adults. They listed instructional design principles for use when working with adults as are adult learning principles (andragogy). They described those strategies in constructivism, a perspective on how people learn with implications of how to support learning. They noted that computer projectors have changed how information is presented and that the World Wide Web and CD-ROMS have increased the availability of current content. Lense (1983) examined training in business and found that "continuing education that incorporates adult learning theories is still in its early stages" (p. 17).

Imel (1995), in reviewing research about teaching adults, noted that adults had different expectations of teachers as compared to undergraduates. These were that the teacher creates a comfortable learning atmosphere, uses a variety of techniques, adapts to diverse (student) needs, and is dedicated to teaching. Klassen (1993) in a survey of college students found that adults and traditional students had different expectations and that a good teacher was good whether teaching adults or traditional students.

The final question "Who is responsible for improving teaching?" was partially addressed by Travis (1995). The inadequacy in preparation of faculty and reward systems based on research and publication has caused some faculty to resist taking time from their research based schedules to focus on improving teaching. Some who are concerned with student learning have the professional pride to improve their performance in the classroom.

This applies whether the class consists of traditional students or adult students. Institutions of higher education can and should encourage and support faculty who are interested in improving teaching. This can be done with faculty workshops that make information available on teaching improvement models without limiting free choice by faculty. The institution can support faculty who adapt a teaching model by making resources available if they are needed. Further, adjusting the reward system to give more emphasis to teaching would cause faculty to become more concerned with their classroom duties, performance, and outcomes. The responsibility for improving teaching ultimately rests with faculty, but the institution must provide support and assistance.

Summary and Conclusions

This brief investigation of the adult student and adult educator points to a void in the literature. Colleges and universities are seeing greater numbers of older students, displaced workers, minorities, females, and commuter students. These students are from diverse backgrounds and bring with them to the classroom a variety of experiences from their life and work. When they are treated and taught as traditional students colleges and universities, while "educating" them, are doing these students disservice.

Additional empirical research is needed about adult students and how they learn in our fast paced society. With the knowledge explosion as we move further into the information age, theories developed in the past may need revision. Although elements for a comprehensive theory of adult learning have been in place since the 1940s, there is no unified theory accepted today. From research, theories can be developed and tested. In

many cases new theories are developed by practitioners based on their experience. Theories that survive the testing need to be widely publicized.

Once this is done, the issue of how to teach the growing number of adult students must be addressed by higher education and business. Again theories need to be developed and tested. Those that pass empirical testing can be used as the basis to develop teaching strategies. Faculty who teach adult students need to be made aware of the theories and strategies in publications, workshops, and faculty development programs. Faculty must become more in tune with the needs of adult students and how to effectively teach them so they can help students take charge of their learning process. Adult educators can experiment with strategies that supplement their teaching style and adapt those that work for them. The result will be that adult students will be listened to and valued, and consequently be taught by more effective methods. The faculty can move from dispensing information to helping the adult student take charge of their learning and become a life long learner.

A challenge for college and university faculty is to recognize the difference in older students as compared to the more traditional student. Then it will be necessary for faculty to examine their teaching methods used in the classroom and make changes. Often the changes will be incremental and can be made by application. Evaluation of the results will determine the theories, models, and methods that are most effective. Knowledgeable and progressive faculty will better serve their customer - the student.

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